

**DIRECT TESTIMONY OF**

**GEORGE A. LIPPARD, III**

**ON BEHALF OF**

**DOMINION ENERGY SOUTH CAROLINA, INC.**

**DOCKET NO. 2021-2-E**

**Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION WITHIN DOMINION ENERGY SOUTH CAROLINA, INC. (“DESC” OR “COMPANY”).**

**A.** My name is George A. Lippard, III. My business address is Post Office Box 88, Jenkinsville, South Carolina 29065. I am the Site Vice President of the Virgil C. Summer Nuclear Station (“VCSNS” or “V.C. Summer”) for Dominion Energy South Carolina, Inc. (“DESC” or the “Company”).

**Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND AND YOUR BUSINESS EXPERIENCE.**

**A.** I earned a Bachelor of Science degree in Mechanical Engineering from Clemson University in 1979 and a Master of Business Administration degree from the University of South Carolina in 1982. I joined DESC, then South Carolina Electric & Gas Company, in 1983 as a Nuclear Training Instructor at VCSNS. I received a Senior Reactor Operator Certification in 1986 and a Senior Reactor Operator License in 1992 from the United States Nuclear Regulatory Commission

1 (“NRC”). Since joining the Company, I have held positions in the Operations,  
2 Outage Management, Licensing, and Training organizations at V.C. Summer. I have  
3 also served in the leadership roles of Operations Manager and Plant General  
4 Manager at VCSNS. On January 30, 2016, I was promoted to Vice-President of  
5 Nuclear Operations for Unit 1. Effective January 1, 2019, my title changed to Site  
6 Vice President of the VCSNS as a result of the merger of Dominion Energy, Inc.  
7 and SCANA Corporation.  
8

9 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

10 A. The purpose of my testimony is to review the operating performance of  
11 VCSNS during the period from January 1, 2020, through December 31, 2020  
12 (“Review Period”).  
13

14 **Q. WHAT ARE DESC’S OBJECTIVES IN THE OPERATION OF VCSNS?**

15 A. DESC’s primary objective at VCSNS is safe and efficient operation. The  
16 Company also strives for excellence in all phases of operation of the facility. The  
17 station’s key focus areas of safety, reliability, outage and work management, work  
18 force development, and organizational effectiveness constitute the Company’s core  
19 business plan elements. DESC’s constant improvement in these areas over the years  
20 has facilitated VCSNS’s outstanding service record. Furthermore, DESC’s business  
21 objectives are focused on maintaining a competitive production cost for the  
22 generation of electricity using nuclear fuel.

1  
2 **Q. WHAT HAS BEEN THE COMPANY’S EXPERIENCE WITH THE**  
3 **PERFORMANCE OF THE VCSNS?**

4 A. VCSNS performed well during the Review Period. DESC continuously  
5 meets or exceeds all NRC requirements and Institute of Nuclear Power Operations  
6 (“INPO”) standards. Consistent with the provisions of Section 58-27-865 of the  
7 South Carolina Code of Laws Annotated, as amended, V.C. Summer’s net capacity  
8 factor based on reasonable excludable nuclear system reductions during the Review  
9 Period was 102.70%, and the gross generation output was 8,041,633 megawatt  
10 hours.

11  
12 **Q. PLEASE EXPLAIN THE ROLES OF INPO AND THE NRC WITHIN THE**  
13 **NUCLEAR INDUSTRY AND DESCRIBE ANY RANKINGS RECEIVED BY**  
14 **VCSNS FROM THOSE AGENCIES.**

15 A. INPO is a nonprofit corporation established by the nuclear industry to  
16 promote the highest levels of nuclear safety and plant reliability. INPO promotes  
17 excellence in the industry in the operation of nuclear electric generating plants. For  
18 the test year, INPO rated VCSNS’s overall performance as exemplary up from a  
19 strong rating during the previous year. An exemplary rating is the highest  
20 achievable rating from INPO. Prior practice before the Commission used the terms  
21 “excellent” and “exemplary” interchangeably to reflect the highest INPO rating.  
22 The Company will use exemplary moving forward with this Commission for ease

1 of reference and to eliminate any confusion.

2 The NRC is responsible for the licensing and oversight of the civilian use of  
3 nuclear materials in the United States. During the Review Period, the NRC reported  
4 that VCSNS operated in a manner that preserved public health and safety and fully  
5 met all cornerstone objectives.

6  
7 **Q. DID VCSNS EXPERIENCE ANY UNPLANNED OUTAGES DURING THE**  
8 **REVIEW PERIOD?**

9 A. Yes. During the Review Period, VCSNS experienced one mid-cycle  
10 unplanned maintenance outage, which I explain in further detail below.

11 **September Mid-Cycle Outage:** On September 7, 2020, at 3:33 p.m., the  
12 Company opened the main generator breaker and brought VCSNS offline to safely  
13 repair a valve actuator air leak on a safety-related, non-radioactive feedwater  
14 isolation valve. The air leak was being monitored under the plant's trending program  
15 and had worsened to the point where repair became imminent. Due to the function  
16 of the valve, the plant must be taken off-line to implement the repairs and perform  
17 post-maintenance testing. The valve actuator was repaired and tested, and the outage  
18 ended with the closure of the generator breaker on September 10, 2020, at 5:10 a.m.

19 **Q. DID VCSNS EXPERIENCE ANY PERIODS OF LESS THAN 100%**  
20 **POWER OUTPUT?**

21 A. Yes. During the Review Period, VCSNS experienced two such de-rating  
22 occurrences.

**Q. WHEN DID THOSE TAKE PLACE?**

A. The first occurred on July 27, 2020 at 6:45 pm. At that time, the unit began to reduce its generation output in a controlled manner to 83% due to the motor fault of one of three large circulating water pumps which draw water from Lake Monticello. The power reduction was required to ensure that the temperature of the water returning to the lake was maintained below the VCSNS permitted environmental temperature limit of 113°F. The Station maintains a spare motor for this pump at an offsite storage shop in Virginia, and, after transporting and installing the spare motor, VCSNS was able to return to 100% power at 11:08 pm on July 30, 2020.

The second de-rating took place on August 22, 2020 at 6:09 pm. Another motor fault occurred on the spare motor which that had been installed in July. Once again, the station was forced to reduce power to 84% to ensure compliance with the permitted 113°F discharge limit regulation. Since there was no spare available to install, the station remained at reduced power levels. In September, as Lake Monticello temperatures cooled, the Station was able to slowly raise power levels and returned to 100% on September 25, 2020 at 1:00 am. The faulted motor was replaced with a motor that had been procured and the third pump was returned to service on October 15, 2020.

1 **Q. DID VCSNS EXPERIENCE ANY PLANNED OUTAGES DURING THE**  
2 **REVIEW PERIOD?**

3 A. Yes. During the Review Period, VCSNS experienced one planned outage.  
4 On April 10, 2020, the unit began to reduce its generation output in a controlled  
5 manner, and the generator output breaker was opened at 9:56 p.m. that same day to  
6 conduct V.C. Summer's 25th scheduled refueling outage ("RF25").  
7

8 **Q. HOW LONG DID RF25 LAST?**

9 A. RF25 lasted approximately thirty days and one hour during which time the  
10 Company met all technical objectives and completed scheduled maintenance  
11 activities. The reactor returned to criticality at 6:18 p.m. on May 9, 2020, and the  
12 outage ended with the closure of the generator output breaker at 11:36 p.m. on May  
13 10, 2020. I am pleased to report to the Commission that the planned outage, which  
14 was scheduled for thirty-three (33) days, was accomplished approximately two days  
15 ahead of schedule, and represented the shortest duration outage in the history of the  
16 station. The outage was completed with no nuclear safety significant events.  
17

18 **Q. PLEASE EXPLAIN THE KEY MAINTENANCE AND MODIFICATION**  
19 **TASKS SCE&G ACCOMPLISHED DURING RF25.**

20 A. During the refueling outage, approximately one-third of V.C. Summer's 157  
21 fuel assemblies were replaced, and scheduled maintenance work that cannot be  
22 performed when the plant is in operation was conducted. During this time, over

1 6,000 tasks including preventative maintenance, corrective maintenance, plant  
2 modification, and surveillance testing tasks were completed successfully. SCE&G  
3 completed several key maintenance and modification tasks during RF25, a few of  
4 which are described below.

5 • **Steam Generator Deposit Minimization Treatment (DMT).** During RF25,  
6 Dominion Energy performed a DMT on all three of its steam generators, based  
7 on results of the inspections done during the previous outage. The VCSNS steam  
8 generators had been in service since 1994, and thermal performance had  
9 declined slowly due to normal fouling over the years. The process was  
10 completed satisfactorily, with the expected improvement in thermal  
11 performance being observed this cycle.

12 • **Steam Generator Inspections.** Every third outage, SCE&G performs detailed  
13 eddy current inspections of steam generator tubes to detect flaws and ensure  
14 integrity on each of its three steam generators. Additionally, the secondary, non-  
15 nuclear side of each steam generator is inspected and cleaned. Although these  
16 scheduled inspections were performed in the previous outage, re-inspection was  
17 necessary after the DMT was completed to ensure that the treatment was  
18 effective and had been performed safely.

19 • **Service Water Piping Replacement.** V.C. Summer utilizes water from Lake  
20 Monticello to provide cooling to various heat loads. This system is known as  
21 service water. Several sections of carbon steel service water piping that were  
22 susceptible to cavitation induced erosion were replaced with more robust

1 stainless-steel piping and valves which reduced the potential for cavitation. The  
2 replacement of this piping and these valves was part of an overall strategy which  
3 will continue in RF26.  
4

5 **Q. WHEN WILL THE NEXT REFUELING OUTAGE OCCUR?**

6 A. DESC's next refueling outage, Refueling Outage No. 26 ("RF26"), is  
7 scheduled for Fall 2021. Refueling outages are scheduled every 18 months to  
8 replace depleted fuel assemblies. Maintenance and testing that cannot be done with  
9 the plant on-line are also conducted during the refueling outage.  
10

11 **Q. WHAT IS THE USED FUEL STORAGE CAPABILITY FOR VCSNS?**

12 A. V.C. Summer's used fuel storage capability consists of a spent fuel pool,  
13 which is equipped with storage racks designed to hold fuel assemblies removed  
14 from the reactor, and a dry cask storage facility, which was placed in service in  
15 January 2016. Together, DESC's fuel storage capability has been designed to  
16 accommodate storage of all fuel used for the life of the plant. During the Review  
17 Period, the Company transferred used fuel from the spent fuel pool to the dry cask  
18 storage facility in Spring 2019. The next such transfer is scheduled for the first half  
19 of 2022.  
20

21 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

22 A. Yes.